

March 1, 1927.

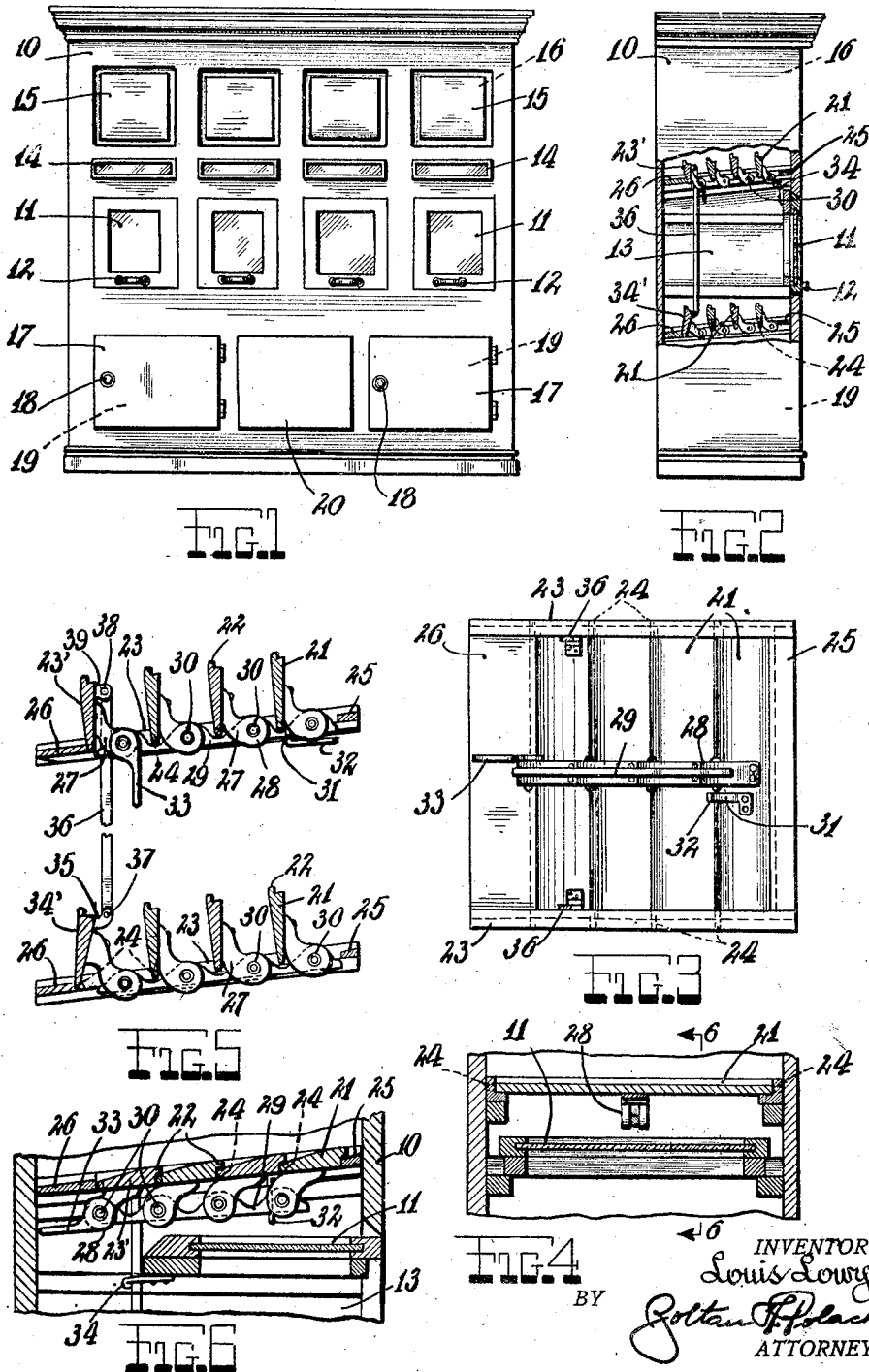
L. LOWY

1,619,741

ICE SAVING REFRIGERATOR

Filed Feb. 4, 1926

2 Sheets-Sheet 1



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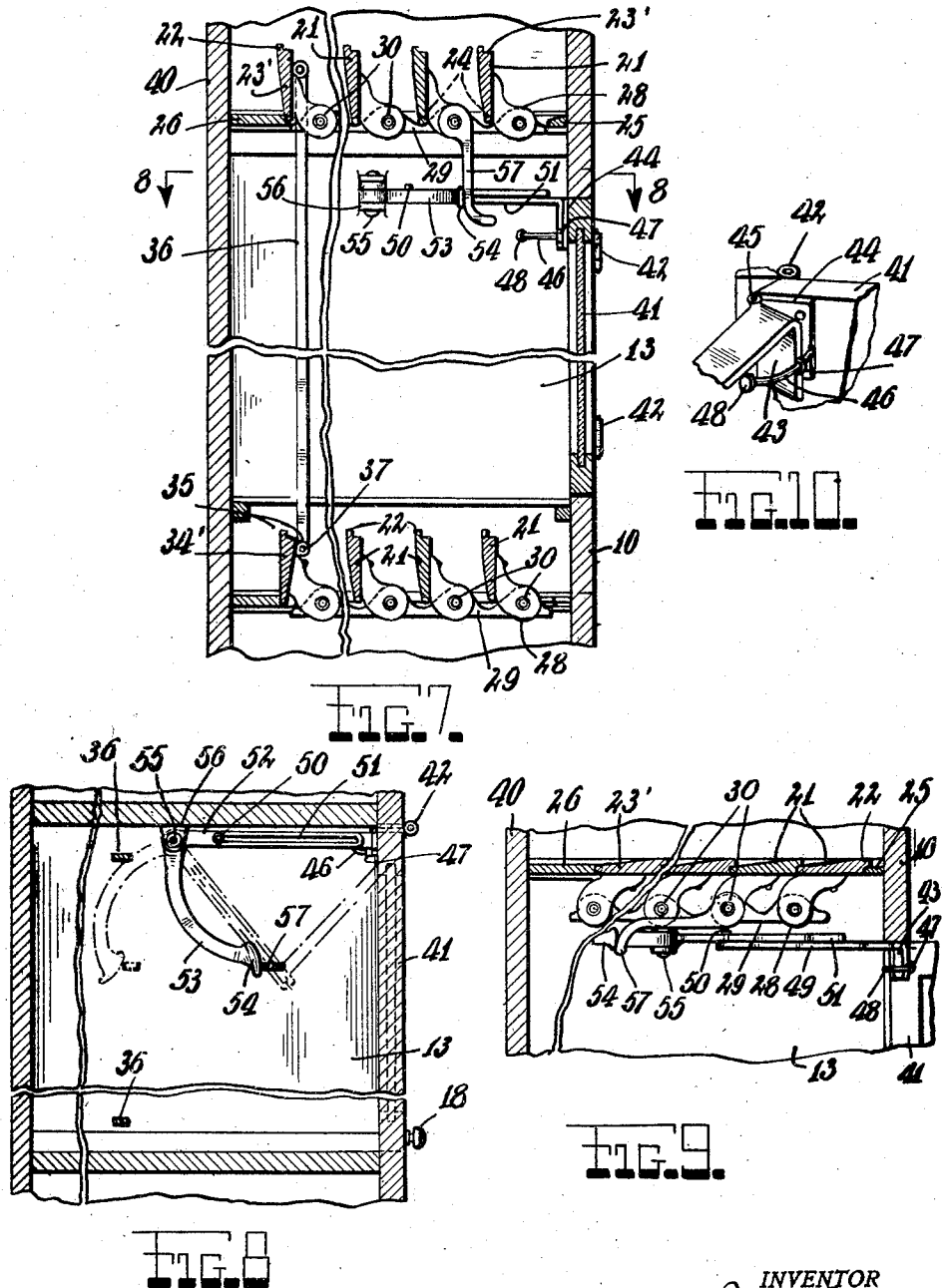
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ICE SAVING REFRIGERATOR

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

LOUIS LOWY, OF BRONX, NEW YORK.

ICE-SAVING REFRIGERATOR.

Application filed February 4, 1926. Serial No. 85,922.

This invention relates generally to refrigerators such as ordinarily used by butchers, grocers, delicatessens, restaurants, hotels and the like.

5 The invention has for an object the provision of an improved shutter which will prevent the ice placed in the refrigerator from being exposed to the temperature of the room, when the door of the said refrigerator is opened.

10 A further object of the invention is the provision of a means of closing the said shutter when the refrigerator door is opened, and of opening the said shutter
15 when the refrigerator door is closed.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawing, and to the appended claims in which the various novel features of the invention are more particularly set forth.

20 Fig. 1, of the drawings, is a front elevational view of a refrigerator embodying my improved device.

25 Fig. 2, is a side elevational view thereof, showing the side of the refrigerator partly removed, so as to expose certain interior parts.

30 Fig. 3, is a top plan view of my improved device, showing the shutter in a closed position.

35 Fig. 4, is a vertical sectional view of my improved device, as shown in Fig. 3, showing same in place in a refrigerator and showing the door thereto.

Fig. 5, is a longitudinal sectional view of my improved device, showing the shutters in an opened position.

40 Fig. 6, is a longitudinal sectional view, taken on the line 6—6 of Fig. 4.

Fig. 7, is a fragmentary vertical sectional view of a refrigerator showing a modification of my improved device.

45 Fig. 8, is a fragmentary horizontal sectional view taken on the line 8—8 of Fig. 7.

Fig. 9, is a fragmentary vertical sectional view of a refrigerator showing the shutter of my improved device in a closed position.

50 Fig. 10, is a fragmentary view of a refrigerator door, showing the lost motion attachment as used in connection with the modification of my improved device.

55 The refrigerator 10, has doors 11, adapted to be swung outward in a horizontal position and pushed or forced inward to permit

access to the provision compartments 13, where the food stuffs, or the like are stored or kept, the mirrors 14, the ice box doors 15 permit ice to be placed in the ice compartment 16, the lower doors 17, provided with handles 18, permit access to the lower provision compartments 19, where food stuffs, or the like may also be stored, the panel 20 represents a dummy door. The above referred to construction being such as ordinarily found in refrigerators commonly used by butchers, grocers, delicatessens, restaurants, hotels, and the like. It being clearly understood that I do not necessarily limit my invention to the particular type of refrigerator as above described.

As here embodied my improved device comprises a shutter having shutter elements 75 21, having longitudinal notched free extremities 22, which are pivotally attached to the side members 23, of a frame, as at 24. The frame also consists of a front cross member 25, and a rear cross member 26. 80 It being understood that the shutter elements 21 are of suitable size to entirely enclose or cover the said frame when the shutter elements are in a closed position, as clearly shown in Fig. 3, of the accompanying drawing. 85 The shutter elements 21 have attached thereto and extending downward therefrom brackets 27, having yoke shaped extremities 28, adapted to receive a shutter bar 29, pivotally attached thereto as at 30. 90 The angle bracket 31 is attached at or near the front or forward extremity of the shutter bar 29, and has a downward depending portion 32. The rear shutter element 23', at the rear, or adjacent to the rear cross member 26, is provided with a bracket 27 having a downward depending portion 33. 95 The above described construction being such as will allow the door 11, when opened, as hereinbefore stated, and which has attached thereto, at or near its upper inner edge, a depending arm 34, to close the shutter elements 21, it being understood, that the depending arm 34 will strike the depending portion 32 of the angle bracket 31. 100 If for any reason this does not occur or function, it will be understood that the depending arm 34 will strike the depending portion 33 of the shutter element 23', at the rear, or adjacent to the rear cross member 26, which 110 will close the said shutter elements 21. It being also understood that the said shutter

elements above referred to are located between the said compartment 13 where the food stuffs are kept, and the said ice compartment 16, where the ice is placed, and that the shutter elements 21, when closed, will prevent the said ice from being exposed to the temperature of the room, when the door 11 is opened.

As a means of preventing the said ice from being exposed to the temperature of the room, when the door 11 is opened, and the air may enter through the said lower provision compartment 19, I have provided a second shutter, located between the said compartment 13, and the lower provision compartment 19, having a rear shutter element 34', at the rear or adjacent to the rear cross member 26 provided with a support 35, at or near the free extremity, adapted to receive a vertical rod 36, pivotally attached at its lower extremity to the said support 35, as at 37, and pivotally attached, at its upper extremity, as at 38, to a support 39, which is attached at or near the free extremity of the said rear shutter element 23'. The above described construction being such as will allow the first mentioned and described shutter elements to similarly operate the said second shutter elements, for the purpose as above stated. It being fully understood that the said shutter elements 21 will normally be held in an opened position by the jamming of the depending arm 34 against the lever 32 depending from the shutter bar.

Referring in particular to Figs. 7, 8, 9, and 10, in which I have shown a modification of my improved device.

In order to adapt my improved device to a refrigerator 40 having a door 41 opened by being swung outward on the hinges 42 to permit access to the said compartment 13, I have provided an operating mechanism for the said shutter elements, comprising a lost motion device consisting of an angle shaped member 43, hinged to a support 44, as at 45, which is attached to the said door 41, on its inner side, adjacent to the said hinges 42, and preferably at the top or upper portion of the door 41. The support 44 has a depending curved portion 46, extending therefrom, and adapted to slidably receive suitable aperture formed in the protruding lug 47 of the angle shaped member 43, so that the door 41 may be opened slightly before the enlarged extremity 48 of the depending curved portion 46 of the support 44, strikes the lug 47 of the angle shaped member 43, during which interval or period the depending curved portion 46 will slide in the aperture formed in the lug 47 of the angle shaped member 43.

The extended portion 49, of the angle shaped member 43, which has attached thereto, at its extremity a pin 50, and extended

therefrom to engage an elongated slot 51, formed in the arm 52, of a bell crank, having a second arm 53, with an enlarged extremity 54, the said bell crank being pivotally attached as at 55, to a suitable bracket 56, conveniently attached to the side of the said compartment 13. The depending lever 57 is attached to one of the said shutter elements 21, so that the said extremity 54 of the arm 53, when the door 41 is closed, holds the said shutter elements 21 in an open position. It being understood that when the door is opened that the said lever will be released, and the said shutter elements 21 will gradually close. The shutter elements 21 are pivotally mounted as indicated at 24, and since brackets with yokes 28 and connecting shutter bar 29 are attached to the bottom side of the shutters 21, the weight of these parts normally urge the shutters to closed position. The shutters are only opened when forced so by the co-action of the door 41 in the closed position, due of course to the portion 49 with pin 50 forcing the bell crank 53 to the position shown in Fig. 8, thus abutting lever 57, opening the shutters. When the door 41 is opened the bell crank 53 assumes the position indicated by the dot dash lines in Fig. 8, allowing the lever 57 to follow it to this position which causes a closing of the shutters.

It will be further understood that my improved device may be made of any suitable material, such as may be adapted for a device of this nature, and that same may be provided with felt or any similar suitable material, to retain the desired temperature and exclude undesirable temperatures.

While I have illustrated and described the preferred embodiments of my invention it is to be understood that I do not limit myself to the precise constructions herein disclosed, and that various changes and modifications might be made therein such as may be required in its adaptability in a cabinet having upwardly swinging or rolling doors and any other changes and modifications without departing from the spirit and scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new and desire to protect by Letters Patent of the United States is as follows:—

1. In a device of the class described, having a door, for each provision compartment, the combination of a frame, a plurality of shutter elements pivotally mounted in said frame, a bracket attached to each of said shutter elements, said brackets being formed with yoke shaped extremities, a bar pivotally attached to said extremities, a lever depending from one of the shutter elements, a bell crank pivotally mounted to one wall of said compartment, one arm of said bell crank

being abutable against said lever, the other arm of said bell crank being formed with a slot, a pin engaging said slot, an angle shaped member supporting said pin, a support hingedly connected to said angle member, said support being fastened to said door, a curved member depending from said support, a lug depending from said angle shaped member, said curved member being slidably engaged in said lug, and said curved member being formed with a large extremity.

2. In a device of the class described, having a door, for each provision compartment, the combination of a frame, a plurality of shutter elements pivotally mounted in said frame, a bracket attached to each of said shutter elements, said brackets being formed with yoke shaped extremities, a bar pivotally attached to said extremities, a lever depend-

ing from one of the shutter elements, a bell crank pivotally mounted to one wall of said compartment, by means of a depending bracket, one arm of said bell crank being abutable against said lever, the other arm of said bell crank being formed with a slot, a pin engaging said slot, an angle shaped member supporting said pin, a support hingedly connected to said angle member, said support being fastened to said door, a curved member depending from said support, a lug depending from said angle shaped member, said curved member being slidably engaged in said lug, and said curved member being formed with a large extremity.

In testimony whereof I have affixed my signature.

LOUIS LOWY.